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WP5 – Implementation of the teaching and training process in the field of road infrastructure management

IO.17 Appointment of a European panel of experts to expand and further develop distance learning in the field of road infrastructure management

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1 INTRODUCTION

The COVID-19 pandemic has forced a departure from the current functioning of society in many aspects of the economy, travel, work and education, not excluding higher education. The necessity of remote education is one of the ways to maintain social distancing and protect our health and life.

A preliminary assessment of the situation at universities in European countries indicates that academic staff were not sufficiently prepared to conduct attractive and practical classes in a remote format.

The necessity to conduct classes remotely involves developing a dedicated didactic and training process project, considering the specific requirements of interdisciplinary engineering knowledge. Transferring this knowledge in remote education, due to its large scope, requires various didactic tools (lectures, fieldwork, design, practicals, laboratories, student assignments and assessment of the progress and knowledge of students and trainees).

The measurable expected final results are:

- Development of a remote learning methodology for Road Infrastructure Management (RIM) as a model solution to provide a basis for extending the methodology to include further aspects of civil engineering and transport.
- Developing an e-handbook for academic staff supporting the remote learning process.
- Development of model digital teaching and training materials dedicated to technical colleges and training for road management staff on RIM:
 - Road safety audit,
 - Roadside safety management,
 - Safety management of vulnerable road users,
 - Road pavement management.
- Developing an e-learning platform with access to project products.
- Appointment of a panel of experts in road infrastructure management.

The InfRO@D project targets the following groups:

- 1) Students, researchers, and academic teachers at universities.
- 2) Road authority staff at national, regional and local levels.
- 3) Experts, specialists, and practitioners involved in RIM activities, including staff who conduct training in various RIM courses.
- 4) All users of road infrastructure, as an indirect target group, for whom the risk of road accidents will ultimately be reduced by increasing the effectiveness and efficiency of RIM activities.

The project is also supported by a group of associates who will cooperate with project partners to consult and evaluate the results. They will implement final products and promote the dissemination and accessibility of the project results.

ABOUT OUTPUT IO.17

- **Objective:** Appointment of a European panel of experts to expand and further develop distance learning in the field of road infrastructure management.
- **Work package:** The task falls under WP5 – Implementation of the teaching and training process in the field of road infrastructure management.
- **Target Groups:**
- Research and teaching staff from institutions involved in the project and other European institutions.
- Experts from organisations dealing with RIM at national, European and global levels (e.g. PIARC, ERF, IRF).
- Students of civil and transportation engineering from all of Europe.

2 APPOINTMENT OF A EUROPEAN PANEL OF EXPERTS TO EXPAND AND FURTHER DEVELOP DISTANCE LEARNING IN THE FIELD OF ROAD INFRASTRUCTURE MANAGEMENT

A European panel of experts in Road Infrastructure Management was appointed at the project's implementation stage. Road Infrastructure Management Panel Expert (RIMPE) was assembled by experts from 6 partner universities (GUT, CUT, UG, UZ, AAU and UC).

Materials were developed and prepared in 4 areas: road safety audit, roadside safety management, safety management of vulnerable road users, and road pavement management.

An information sheet was prepared for each expert, including information on affiliations, academic and other achievements and competencies. In the final stage, experts from technical universities and institutions dealing with RIM (at national, European and global levels) will be invited to the panel, allowing them to raise their qualifications in distance learning and knowledge related to RIM.

Ultimately, the knowledge of the experts will be available to civil and transportation engineering teaching and training staff to raise their qualifications in remote or hybrid education. Two new projects are planned to develop cooperation and promote action RIMPE: *European Road Safety Partnership - Network-Wide Road Safety Assessment* and *Road Transportation Systems Engineering development in Sub-Saharan Africa - Modern EU Master Programme & Capacity Building* which EU financed (Erasmus program)

3 ROAD INFRASTRUCTURE MANAGEMENT EXPERT PANEL

3.1 Division of tasks

The founding members of RIMPE appointed the chairman and vice-chairman of the expert panel., who were elected by vote. Mariusz Kiec was elected as a Chairman and Salvatore Cafiso was elected as vice-chairman.

Representatives from all participating universities will sit on the panel's board. RIMPE members will be specialists in the area of road infrastructure management. As a result of consortium work, Manifesto was prepared as a first step in future activities in remote distance learning in road infrastructure management.

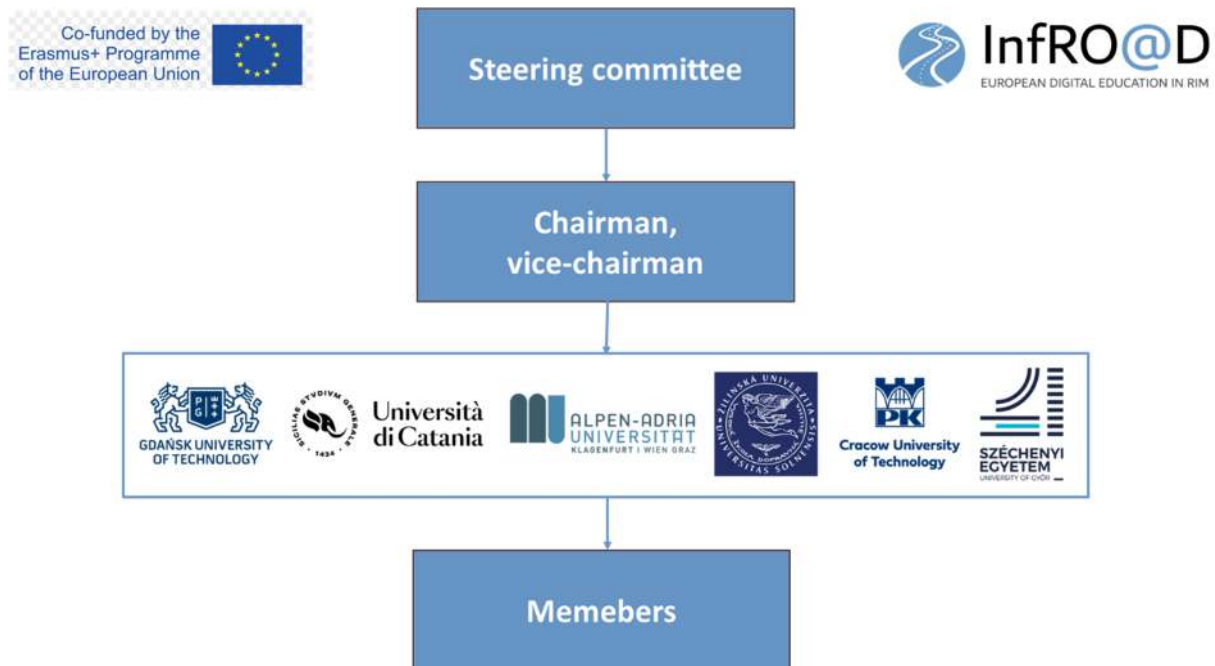


Figure 1 – RIM Expert Panel scheme

3.2 Member task

A member may know about Road Infrastructure Management or remote education methodology. The Expert Panel Members will be tasked with:

- Participation in on-line meetings.
- Developing remote learning methods using modern teaching methods.
- Ensuring that the programme is kept up to date.

RIMPSE members, working together, can also produce joint publications, provide a forum for exchanging knowledge and experience, and establish consortia for new international research or teaching projects.



An essential task of the RIMPE members will be disseminating knowledge about the modern curricula implemented using the e-learning platform. This will allow for the achievement of the

goal of constantly improving the quality of education, with the necessity of shifting to the remote mode in the field of RIM.






3.3 Members of RIMPE




The first members of RIMPE were experts from the INFRO@D project, with 15.

<p>Gdansk University of Technology</p>	
 <p>Wojciech Kustra</p>	<p>Wojciech Kustra Eng, Ph.D., is an Associate Professor at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>2016, he graduated with a PhD in traffic engineering at the Gdansk University of Technology.</p> <p>His main research interests include road safety, road traffic engineering, forecasting, and planning. Certificate of road safety auditor, EuroRAP expert. Over 20 years of experience teaching and scientific development in road safety, traffic engineering forecasting and planning.</p> <p>Lectures at the Gdansk University of Technology include Road safety management, Transportation systems, GIS for Transportation, Traffic engineering.</p> <p>Author and co-author of the book and technical requirements: Modelling selected road safety measures on long road sections, Pedestrian Protection – Manual for pedestrian-traffic organisers, He is the author and co-author of 78 publications</p>
 <p>Tomasz Mackun</p>	<p>MSc. Eng. Tomasz Mackun is a senior lecturer at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>Main research interests include RS road planning, designing, and pedestrian crossing safety management. Certificate of road safety auditor. Over 15 years of experience in teaching and scientific development. Lectures at the GUT include RISM, Transport planning, Road, motorway, street and intersection designing.</p> <p>One of the main author:</p> <ul style="list-style-type: none"> • Guidelines for the design of pedestrian crossings – Polish standards. • Guidelines for lighting pedestrian crossings – Polish standards.




	<ul style="list-style-type: none"> • The Octopus Method – a method of conducting targeted traffic safety control at pedestrian crossings without traffic lights. <p>Leader of the team that carried out road safety inspections at over four thousand pedestrian crossings without traffic lights in Warsaw.</p>
 <p>Marek Pszczola</p>	<p>Marek Pszczola Eng, PhD., DSc., is an Associate Professor at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>Main research interests include: road materials properties, thermal stress analysis, design of pavement structures, airfield design and analysis. Over 20 years of experience in teaching and scientific development in road construction engineering and planning. Lectures at the Gdansk University of Technology includes: road and highway materials research, airport construction, and design of pavement structures. Author and co-author of the book and technical requirements: Analysis and design of flexible and semi-rigid pavements, catalogue of typical pavement structures and many scientific papers. He is the author and co-author of 63 publications: Experience in EU and international projects.</p>
 <p>Jacek Oskarbski</p>	<p>Jacek Oskarbski Eng, PhD., DSc., is an Associate Professor at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>Member of the Board of the Association of Intelligent Transport Systems Poland (2007-2016), since 2016 member of the Programme Council.</p> <p>He is a graduate of the University (1994). He worked as the road planner in BPBK and Transprojekt Gdanski Office (1993-1996). He took a position as an assistant in the Highway Engineering Department in 1996. He defended PhD thesis 'Influence of the Structure of the Street Network on the Efficiency of Traffic Functioning in Cities' in 2005. He also was the head of the Traffic Engineering Department in the City of Gdynia for 7 years (2004-2011) and the head of the Transport Engineering Department in Road and Green Area Management in Gdynia from 2012-2021. His main area of scientific interest is the application and development of modern transport management models, methods, and measures (traffic modelling and forecasting, Sustainable transport planning, Intelligent Transportation Systems, traffic engineering and mobility management). He is a co-author of the concept and supervised the implementation and development of the integrated traffic management system TRISTAR in the Tri-City. He has led or participated in many research projects e.g., under EU FP7, HORIZON 2020, Development of Road Innovations, POIR (i.e. CIVITAS DYN@MO, ZEUS, FLOW, BUSTRIP, many national research projects). He is the author and co-author of 120 publications.</p>

 <p>Alina Guzik</p>	<p>Digital education expert, certified e-learning designer, and creator of a dozen award-winning products implemented worldwide. Author of world-class innovation granted by the National Centre for Research and Development and The Book of Trends in Education translated into six languages, awarded by the Society of American Publishers. Designer of e-courses, mobile apps, educational platforms, and interactive textbooks. PhD candidate at Gdańsk University of Technology.</p>
 <p>Daniel Kaszubowski</p>	<p>Daniel Kaszubowski Eng, PhD., DSc., is an Associate Professor at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>Researcher and practitioner with 15 years of work experience in various fields, including the private sector, public administration, and R&D. From 2009, he worked at the Gdańsk University of Technology. Specialising in urban mobility with a practical focus on urban freight management. Involved in several UE-funded projects, including pre-accession funds, INTERREG, CIVITAS, and URBACT. The most recent project is Erasmus + 'S@mpler' as a project leader.</p>
 <p>Joanna Wachnicka</p>	<p>Joanna Wachnicka Eng, Ph.D., is an Associate Professor at the Department of Transport Engineering (Faculty of Civil and Environmental, Gdansk University of Technology).</p> <p>Main research interests include: Road safety, road traffic engineering, road and highway designing, Transport safety, and data analysis. Certificate of road safety auditor. 15 years of experience in teaching and scientific development in road safety, traffic engineering forecasting designing. Lectures at the Gdansk University of Technology include: Road planning and designing, Fundamentals of Transport Safety, and Traffic Engineering.</p> <p>She was involved in numerous national and EU projects, i.e.</p> <ul style="list-style-type: none"> • Erasmus + projects: MENA-SAFE, S@mpler, EuroS@P, Info@d. • “Modern methods of calculating capacity and assessing traffic conditions for roads outside urban agglomerations, including expressways” under the program under the RID program development of road innovations project co-financed by the National Center for Research and Development and GDDKiA • The impact of time and operating conditions on the durability and functionality of road safety elements” under the program under the RID program development of road innovations project co-financed by the National Center for Research and Development and GDDKiA • “Transfer without Barriers”, as part of the National Center for Research and Development. • Guidelines for the design of rural roads and streets within the framework of road engineering standards and guidelines as tools for optimizing the spending of funds from the European Union budget (package B).

University of Catania	 Università di Catania
 <p>Salvatore Cafiso</p>	<p>Salvatore Cafiso is Full professor of “Road, Railways and Airport”, Teaching “Highway geometric design” and “Pavement engineering”; Past coordinator of the PhD course in “Engineering of transportation infrastructures”; Delegate for International Relations and Director of the Infrastructures of Transport laboratory (ITlab) at the University of Catania. Member of scientific International committees: TRB AHB65 “Operational Effects of geometrics”, TRB ANB10 “Transportation Safety Management”; TRB steering committee of “International Symposium on Highway Geometric Design”, Tongji University “Joint International Research Laboratory”, PIARC National Technical Committee “Design and management of safer roads”. Author of over 200 scientific papers and books published in international journals and conference proceedings.</p>
 <p>Giuseppina Pappalardo</p>	<p>Giuseppina Pappalardo, PhD in “Engineering of road infrastructures”, is an assistant professor at the Department of Civil and Architectural Engineering (DICAR) of the University of Catania. Her scientific activity mainly focuses on road and transport management with special emphasis on safety and road asset management. Her research products include more than 60 published papers. She is a member of the Committee of the Permanent International Association of Road Congress (PIARC).</p>
Alpen Adria University	
 <p>Kyandoghene Kyamakya</p>	<p>Professor Dr Kyandoghene Kyamakya holds a chair of “TRANSPORTATION INFORMATICS” (in the Institute of Smart Systems Technologies) and is mainly involved in ITS related teaching and research at Alpen-Adria Universität Klagenfurt, Austria. During the last 10 years, Prof Kyamakya has supervised more than 12 PhD theses on ITS related topics. He has acquired and managed various funded projects. Also, he has been involved in some EU Tempus Projects as Project Leader for Alpen-Adria Universität Klagenfurt:</p> <ol style="list-style-type: none"> 1) Tempus project TransITS (ETF-JP-00139-2008): advanced curriculum on intelligent transportation systems by means of ICT (Funder: FFG/Austria; Years: 2009 to 2011) 2) Tempus project IHSITOP (530319-TEMPUS-DE-JPHES): Implementation of the agreement Innovation hybrid strategy of IT-outsourcing partnership with enterprises.

	<p>National project: WOMAN - Wir Organisieren ein Mentoring-, Ausbildungs-, Networking- und Praxisprogramm für Technik-Studentinnen (We Organize Mentoring-, Education-, Networking and Practice-programme for female technic students) (Funder: FFG/Austria; Years: 2009 to 2010)</p>
 <p>Jean Chamberlain Chedjou</p>	<p>Dr JC Chedjou main area of expertise is Dynamical Systems in Transportation. He does give lectures, labs, and supervise Master and PhD thesis works in that thematic area at Alpen-Adria Universität Klagenfurt in the Chair of Prof Kyamakya.</p> <p>Dr JC Chedjou has participated in the implementation of the following Tempus Project:</p> <p>Tempus project TransITS (ETF-JP-00139-2008): advanced curriculum on intelligent transportation systems by means of ICT (Funder: FFG/Austria; Years: 2009 to 2011)</p> <p>Authors of a number of publications in Neurocomputing, Control Systems and Computer Science (CSCS), Autonomous Systems: Developments and Trends, IEEE transactions on neural networks and learning systems.</p>
<p>Cracov University of Technology</p>	
 <p>Mariusz Kiec</p>	<p>Mariusz Kiec Eng, PhD., DSc, is an Associate Professor at the Department of Roads, Railways and Traffic Engineering (Faculty of Civil Engineering, Cracow University of Technology).</p> <p>In 2009, he graduated with PhD at the Cracow University of Technology in traffic engineering and was awarded a postdoctoral degree in 2020.</p> <p>He is an expert in traffic engineering, especially in road safety and road design issues. His scientific interests include traffic engineering and the geometric design of road infrastructure. He conducts research in the field of geometric road design, road safety, methods of assessing traffic performance, and identification of traffic processes with their modelling. He specialises in assessing the impact of road infrastructure on the road safety of various user groups with a particular application of accident modelling methods using surrogate safety measures and a proactive approach.</p> <p>He is an author and co-author of 90 publications, including journal articles, conference papers, and monograph chapters. He is a co-author of the Polish intersection capacity manual and the new Polish guidelines for road infrastructure design. He participated in implementing nine research projects in the traffic engineering field.</p> <p>He attended more than 30 international conferences, including the International Symposium on Highway Geometric Design,</p>

	<p>Transportation Research Board Annual Meeting, Transport Research Arena, and Road Safety & Simulation International Conference, with papers on road design and safety. Additionally, he was a member of the scientific and organisation committees of some conferences.</p> <p>He combines engineering and scientific activities and, as an author or co-author, prepared over 70 studies in traffic engineering and road infrastructure design, which were commissioned by the government and road administration, as well as private companies.</p> <p>He conducts lectures, design, and laboratory exercises for civil engineering and transportation students at the Faculty of Civil Engineering in the geometric design of road infrastructure, traffic engineering, and road safety.</p>
<p>University of Žilina</p>	
 <p>Miroslava Mikusova</p>	<p>Dr. Miroslava Mikusova completed her Master’s degree (Dipl. Ing.) in the field of Information and Management Systems at the Faculty of Management Sciences and Informatics, University of Zilina. Actually, she works as a Transport Engineer, lecturer and researcher at the Department of Road and Urban Transport at the University of Zilina.</p> <p>She worked as an ERAC chair researcher for Intelligent Transport Systems and as a senior expert in Latin American transport-related projects. She is the author of transport and mobility-related research papers published in Chile, Colombia, Dominican Republic, Brazil and Cuba.</p> <p>She attended several courses related to Spanish language and culture and received various diplomas (within them the “DSE – Diploma superior of the Spanish language – expert of level A” with worldwide validity and recognition). During her stay in Spain, she worked as a trainee in Ghesa, s.a. at the Department of Transport Engineering (Seville, Spain), and she made a scholarship at the University of Valencia and the Polytechnic University of Valencia. She also worked as a researcher in Valencia Port in the section of Research on Market Intelligence. She has been involved in different projects of IEI – International Institute of Economy (Valencia, Spain) and CENIT – Center for Innovation in Transport (Barcelona, Spain).</p> <p>Her research activities are based on cooperation with the main international transport research institutions, including CDV –</p>

	<p>Center for Transport Research (Brno, Czech Republic), KTI – Institute for Transport Sciences (Budapest, Hungary), ITS – Motor Transport Institute – Road Traffic Safety Centre (Warsaw, Poland), CENIT – Centre for Innovation in Transport (Technical University of Catalonia, Barcelona, Spain), DATS Research Group – Development and Advising in Traffic Safety (University of Valencia, Spain), ANPET Research group – Transportation Demand Management (University of Brazil, Brazil).</p> <p>She worked as a leading researcher in 15 international projects related to ITS, road safety, sustainable transport and smart cities. She is a member of ECTRI, a working group for Transport Safety. Furthermore, she works as a committee member of 21 international scientific conferences and reviewer of 12 scientific journals (120 verified reviews). She is an editor of 3 scientific books, one topical collection and two special journal issues. Her research interests include mobility management, road safety management and road infrastructure management.</p>
<p>University of Gyor</p>	
 <p>Attila Borsos</p>	<p>He received his master’s degree in economics from the University of Gyor, Hungary and civil engineering from Delft University of Technology, Netherlands. He gained his PhD in civil engineering from the University of Gyor, Hungary, where he has been associate professor in the Department of Transport Infrastructure and Water Resources Engineering since 2012 and vice dean for research in the Faculty of Architecture, Civil Engineering and Transport Sciences since 2015. He was a Visiting Scholar at Florida Atlantic University in 2013 and a Fulbright Visiting Scholar at the University of Connecticut in 2010. He was a member of the PIARC World Road Association Technical Committee 3.2 “Design and Operation of Safer Road Infrastructure” from 2012 to 2015. His main research interest is road safety, more specifically, accident prediction models, traffic safety trends, surrogate measures of safety, and the effect of Autonomous Vehicles on safe road design.</p>
 <p>Daniel Miletics</p>	<p>He received his master’s degree in civil engineering from the University of Gyor, Hungary. He gained his PhD in Civil Engineering from the University of Gyor, Hungary, where he has been an associate professor in the Department of Transport Infrastructure and Water Resources Engineering since 2020. He is the manager of various courses in the field of road design and traffic engineering and is responsible for organising an international student workshop called City and Traffic. He was a visiting scholar at Technical University Berlin in 2013, and he</p>

	<p>has been involved in different international projects since 2009 in the field of road safety, transport modelling, and higher education. He has been an active road safety auditor and an associate value specialist in road development projects since 2016. He is regularly involved in road design projects, mostly in the field of traffic engineering. His main research interest is road safety.</p>
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RIMPE
Road Infrastructure Management Panel of Experts

MANIFESTO

In recent years, there has been a rapid development of distance learning methods as a result of the COVID-19 pandemic. This opened up new opportunities and challenges in education. The sudden change in the approach to education has resulted in a lack of teachers' preparation and excellence in modern teaching methods, especially in teaching engineering knowledge, which could enable the maintenance of a high level of education and the diversity of classes conducted. The necessity of these changes and the dynamics of ongoing educational processes mean that academic teachers should be supported in improving the methodologies of conducting courses in Road Infrastructure Management.

The RIMPE ambition is to create a network of education institutions with excellent knowledge of Road Infrastructure Management and remote education methodology to disseminate possibilities of new teaching methods, distance learning and remote education, and digital technology.

Objectives:

1. To promote and support excellent education in education institutions concerning Road Infrastructure Management,
2. To help academics reach education excellence.
3. To promote modern methods of education in engineering
4. To provide a forum for academics with a common interest in Road Infrastructure Management for ideas and methods exchange.
5. To provide a platform with best practices in a new remote and distance learning approach.
6. Disseminating knowledge about the modern curricula implemented using the e-learning platform.
7. To support efforts to improve the quality of education in Road Infrastructure Management in the EU and LIMC countries.

Scope:

The scope of activities is broad and includes (but is not limited to):

1. Participation in online meetings.
2. Developing remote learning methods using modern teaching methods.
3. Ensuring that the program is kept up to date.

Target:

Education Institutions are welcome to join the initiative. Our target is education excellence joined with excellent research in RIM at the level of:

- education methods,
- common publications,
- common projects,
- conference participation and joint organisation,
- broad collaboration in EU initiatives (including Erasmus projects),
- establish consortia for new international research or teaching projects.

Means:

The initiative will be realised through a variety of means.

1. Initial kick-off meeting in Catania, June 2023, followed by regular online meetings,
2. Formation of the executive committee to manage the overall initiative,
3. Collaboration with similar educational institutions
4. Web and social media presence,

The **RIMPE** founding members: Gdansk University of Technology, University of Catania, Alpen Adria University, Cracov University of Technology, University of Žilina, University of Gyor

Catania, June 21 2023